



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/829,039

04/20/2004

Brian C. Taggart

042390.P18809

7420

8791

7590

04/20/2006

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER

CHAMBLISS, ALONZO

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding..

Office Action Summary

Application No.

10/829,039

Applicant(s)

TAGGART ET AL.

Examiner

Alonzo Chambliss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see remarks, filed 2/6/06, with respect to the rejection(s) of claim(s) 1-6 and 8-14 under 102 rejection have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Koopmans (US 6,847,105).

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference signs mentioned in the description: 16, 270, 272, and 226. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4-6 and 8-14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Koopmans (US 6,847,105).

With respect to Claim 1, Koopmans teaches at least a first die 20 having an integrated circuit formed therein and at least one redistribution conductor 37 (i.e. trace) including a pair of contacts 36, 38 on the die 20. At least one pair of redistribution wire bonding wires 28, each redistribution wire bonding 28 having a respective die portion, the die portions of the respective bonding wires 28 being electrically attached to the respective contacts 36, 38 of the redistribution conductor 37 (see Figs. 2, 3, 14, and 15).

With respect to Claim 2, Koopmans teaches a plurality of redistribution conductors 37, each including a respective pair of contacts 36, 38 on the die. A plurality of pairs of redistribution wire bonding wires 28, each redistribution wire bonding wire having a respective die portion, the die portions of the respective wire bonding wires being electrically attached to the respective contacts of the redistribution conductors so as to connect a respective one of the pairs of redistribution wire bonding wires through a respective redistribution conductor to one another (see Figs. 2, 3, 14, and 15).

With respect to Claims 4 and 6, Koopmans teaches at least a first component 30 (i.e. substrate) other than the die. At least a first terminal on the first component a first

of the redistribution wires of the pair having a component portion attached to the terminal, wherein the terminals is outside an area of the die (see col. 5 lines 64-67 and col. 6 lines 1-21; Figs. 2, 3, 14, and 15).

With respect to Claim 5, Koopmans teaches at least a second terminal on the first component, the other redistribution wire of the pair having a component portion attached to the terminal (see Figs. 2, 3, 14, and 15).

With respect to Claim 8, Koopmans teaches at least a third contact on the die, a second of the redistribution wire bonding wires of the pair having apportion attached to the third contact (see Figs. 2, 3, 14, and 15).

With respect to Claim 9, Koopmans teaches a substrate 30, a microelectronic die 20 having an integrated circuit formed therein and mounted to the substrate 30. A pair of redistribution terminals is on the substrate 30. A redistribution conductor 37 interconnecting the redistribution terminals, the redistribution conductor 37 including a redistribution contact 38 on the die 20 and a bonding wire 28 having first and second portions electrically attached to one of the redistribution terminals and to the redistribution contact 38, respectively (see Figs. 2, 3, 14, and 15).

With respect to claim 10, Koopmans teaches a plurality of pairs of redistribution terminals on the substrate and a plurality of redistribution conductors, wherein each interconnecting the redistribution terminals of a respective pair. Each redistribution conductor including a redistribution contact on the die and a wire bonding wire having first and second portions electrically attached to one of the redistribution terminals and to one of the redistribution contacts, respectively (see Figs. 2, 3, 14, and 15).

With respect to Claim 11, Koopmans teaches conductor includes a pair of redistribution contacts on the die and a pair of redistribution wire bonding wires, each redistribution wire bonding wire having a respective first portion electrically attached to a respective one of the redistribution terminals of the pair and a respective redistribution contact of the pair (see Figs. 2, 3, 14, and 15).

With respect to Claim 12, Koopmans teaches a substrate 30, a microelectronic die 60, having an integrated circuit formed therein and mounted to the substrate 30. A plurality of functional terminals is on the substrate 10. A plurality of functional contacts 38 on the die 20, each being connected to the integrated circuit. A plurality of functional wire bonding wires 28, each having a first portion attached to a respective functional terminal and a second portion attached to a respective functional contact 38. A pair of redistribution terminals on the substrate 30 and a redistribution conductor 28, interconnecting the redistribution terminals, the redistribution conductor 28 including a redistribution contact 32 on the die 20 and a wire bonding wire 28 having first and second portions electrically attached to one of the redistribution terminals and to the redistribution contact 32, respectively (see Figs. 2, 3, 14, and 15).

With respect to Claim 13, Koopmans teaches wherein the redistribution conductor is not connected to the integrated circuit between the redistribution contacts (see Figs. 2, 3, 14, and 15).

With respect to Claim 14, Koopmans teaches wherein the redistribution conductor includes a pair of redistribution contacts on the die and a pair of redistribution wire bonding wires, each redistribution wire bonding wire having a

respective first portion attached to a respective one of the redistribution terminals of the pair and a respective redistribution contact of the pair (see Figs. 2, 3, 14, and 15).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koopmans (US 6,847,105) as applied to claim 1 above, and further in view of Li et al. (US 5,838,072).

With respect to Claim 3, Koopmans discloses the claimed invention except for a wire between contacts on a die. However, Li discloses a wire 35 or 45b between contacts 32b, 34 or 42b, 44b on a die 41 (see Fig. 4). Thus, Koopmans and Li have

substantially the same environment of a chip wire bonded to an external element.

Therefore, one skilled in the art would readily recognize incorporating a wire between contacts of Koopmans, since the wire would reduce the space taken on the chip by power buses and reduction in the voltage drop across the chip as taught by Li.

The prior art made of record and not relied upon is cited primarily to show the product of the instant invention.

Conclusion

7. Any inquiry concerning the communication or earlier communications from the examiner should be directed to Alonzo Chambliss whose telephone number is (571) 272-1927.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-7956

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system Status information for published applications may be obtained from either Private PMR or Public PMR. Status information for unpublished applications is available through Private PMR only. For more information about the PMR system see <http://pair-dkect.uspto.gov>. Should you have questions on access to the Private PMR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or EBC_Support@uspto.gov.

Application/Control Number: 10/829,039
Art Unit: 2814

Page 8

AC/April 16, 2006

A handwritten signature in black ink, appearing to read "Alonzo Chambliss". The signature is fluid and cursive, with the first name "Alonzo" and last name "Chambliss" clearly distinguishable.

Alonzo Chambliss
Primary Patent Examiner
Art Unit 2814